

**AMENDMENTS TO THE CLAIMS**

This Listing of Claims will replace all prior versions and listings of claims in this application.

**Listing of Claims:**

1. (Currently Amended) A method for dynamically allocating link bandwidth on a Resilient Packet Ring having a plurality of nodes, which is based on fairness bandwidth calculation per advertisement interval, characterized in that, the method comprises comprising the following steps in one advertisement interval:

[[a.]] measuring a group of variables an add rate which is a byte count for local packets added onto the ring by at least one of the nodes for fairness eligible packets, a total add rate which is a total byte count for local packets added onto the ring by at least one of the nodes, an fw rate which is a byte count for transit packets on the ring for the fairness eligible packets, and a total fw rate which is a total byte count for transit packets on the ring; the counts being related to data packets on each node of the Resilient Packet Ring;

[[b.]] calculating a local fair rate of each node on the Resilient Packet Ring using the measured variables counts;

[[c.]] determining the an advertising rate of each node on the Resilient Packet Ring based on the local fair rate and an the advertising rate provided by a downstream node; and

d. each node on a resilient packet ring determines the advertising rate by Step c, and each node on the Resilient Packet Ring transmits transmitting data packets with the determined advertising rate[[.]];

wherein the step of calculating a local fair rate of each node on the Resilient Packet Ring using the measured counts comprises:

calculating an idle rate = link rate - total add rate - total fw rate, wherein the link rate is a byte count in one advertisement interval at a full link rate; and  
if idle rate is less than an idle rate threshold, wherein the idle rate threshold is set to 0.01 or less:

$$\text{acc\_idle} = (\alpha - 1) * \text{acc\_idle} / \alpha,$$

otherwise,

acc\_idle = acc\_idle + idle\_rate /  $\beta$

acc\_idle = min(acc\_idle, unreserved\_rate), wherein the acc\_idle is substantially the integral of the idle rate, and its value is no more than the unreserved rate, which is the unreserved link rate; and

calculating a local fair rate =  $(\delta-1) * \text{local_fair_rate} / \delta + \text{add_rate}(\delta * \text{weight}) + \text{acc_idle} / \delta$ ,

wherein, the weight is the station weight for a weighted fairness algorithm.

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) The A method for dynamically allocating link bandwidth on a Resilient Packet Ring having a plurality of nodes, which is based on fairness bandwidth calculation per advertisement interval according to claim 1, characterized in that, comprising Step e comprises the following further steps in one advertisement interval:

measuring a group of counts related to data packets on each node on the Resilient Packet Ring;

calculating a local fair rate of each node on the Resilient Packet Ring using the measured counts;

determining an advertising rate of each node on the Resilient Packet Ring based on the local fair rate and an advertising rate provided by a downstream node; and

each node on the Resilient Packet Ring transmitting data packets with the determined advertising rate;

wherein the step of determining an advertising rate of each node on the Resilient Packet Ring based on the local fair rate and an advertising rate provided by a downstream node comprises:

[[c1.]] each node on the Resilient Packet Ring setting if the received advertising rate is less than the local fair rate, the an advertising rate is set to the value of the received advertising rate provided by its downstream node if the advertising rate provided by its downstream node is less than the local fair rate; otherwise,

[[c2.]] each node on the Resilient Packet Ring setting if fw\_rate is less than local\_fair\_rate, the advertising\_rate is set to the a local\_fair\_rate if a fw\_rate is less than the local\_fair\_rate; otherwise,

[[c3.]] each node on the Resilient Packet Ring setting if add\_rate is more than minimum packet size or there are packets in the low priority queue to be transmitted, the advertising\_rate is set to the local\_fair\_rate if an add\_rate is more than a minimum packet size or there are packets in a low priority queue to be transmitted;

[[c4.]] otherwise, each node on the Resilient Packet Ring setting the advertising\_rate is set to the received advertising rate provided by its downstream node.

5. (Currently Amended) The method for dynamically allocating link bandwidth on a Resilient Packet Ring having a plurality of nodes according to claim 1, characterized in that, Step d means that: wherein each node on the resilient packet ring Resilient Packet Ring determines the advertising rate by Step e, and transmits data packets with a rate not more than the determined advertising rate, to ensures ensure the a fair bandwidth allocation to the nodes on the resilient packet ring Resilient Packet Ring.

6. (New) The method for dynamically allocating link bandwidth on a Resilient Packet Ring having a plurality of nodes according to claim 4, wherein each node on the Resilient Packet Ring transmits data packets with a rate not more than the determined advertising rate, to ensures a fair bandwidth allocation to the nodes on the Resilient Packet Ring.